

## CLAIMS

What is claimed is:

1. Method for making efficient use of air link resources and network capacity in a mobile telecommunication system having at least one network supporting communications between two user equipments (UEs), said method comprising the steps of:

(a) a first one of said two UEs generating a session initialization protocol (SIP) message to a second one said two UEs setting forth various media types and requesting which of the media types set forth said second UE can accommodate;

(b) said first UE transmitting the SIP message created at step (a) to a proxy call state control function of said network;

(c) said network modifying the SIP message from said first UE by deleting from said message any media not supported by said network; and

(d) transmitting the modified SIP message to a said second one of said UEs.

2. The method of claim1 wherein step (c) further comprises:

(e) further modifying said message by deleting media from said message which the first UE is not entitled to utilize; and (f) transmitting the further modified message to the second UE.

3. The method of claim 1 further comprising:

(e) said second UE determining media types said second UE will accommodate;

(f) modifying the message received at step (d) from said first UE by eliminating any media which said second UE will not accommodate and which are not supported by said second UE;

(g) said second UE transmitting a session progress message to said network; and

(h) said network transmitting the session progress message received at step (g) to said first UE.

4. The method of claim 3 wherein step (h) further comprises:
- (i) authorizing network resources using a session requested by the session progress message.
5. The method of claim 4, further comprising:
- (j) said first UE determining media types of the session progress message;
  - (k) said first UE transmitting a final session progress message to the second UE through said network; and
  - (l) said second UE reserving resources responsive to receipt of the final session progress message.
6. The method of claim 5, further comprising:
- (m) said first UE reserving resources for a session and reporting availability of the resources to the second UE using a success message; and
  - (n) the second UE, responsive to receipt of the message transmitted, transmitting an OK message to the first UE using a different CODEC.
7. The method of claim 6, further comprising:
- (o) said first UE, responsive to the OK message, sending a second success message to the second UE and setting up to receive the different CODEC; and
  - (p) said second UE sending using a new CODEC to the first UE responsive to the acknowledge received at step (o).
8. A method for making efficient use of air link resources and network capacity in a mobile telecommunication system having a plurality of networks supporting communications between first and second user equipments (UEs), said method comprising the steps of:

(a) said first UE generating a session initialization protocol (SIP) message requesting media types which said second UE can accommodate;

(b) said first UE transmitting the SIP message to a proxy call state control function of one of said networks;

(c) said one network modifying the SIP message by deleting from the SIP message any media not supported by said one network; and

(d) said one network transmitting the modified message to a said second UE through a second one of said networks.

9. The method of claim 8 further comprising:

(e) said one network further modifying said message by deleting media from said message which said first UE is not entitled to utilize.

10. The method of claim 8 further comprising:

(e) said second UE, responsive to receipt of the modified message transmitted at step (d), determining the media types said second UE will accommodate; and

(f) said second UE transmitting a session progress message with the determined media types.

11. A method for making efficient use of air link resources and network capacity in a mobile telecommunication system having a plurality of networks supporting communications between first and second user equipments (UEs), said method comprising the steps of:

(a) said first UE generating a session initialization protocol (SIP) message requesting media type which said second UE can accommodate;

(b) said first UE transmitting the SIP message created at step (a) to a proxy call state control function of one of said networks;

(c) said one network modifying the message by deleting from said message any media type not supported by said one network;

(d) said one network transmitting the modified message to a second one of said networks; and

(e) said second one of said networks, responsive to receipt of the modified message transmitted at step (d), transmitting the message to said second UE through a third one of said networks.

12. The method of claim 11 wherein step (c) further comprises:

(f) said second network further modifying said message by deleting media from said message which said first UE is not entitled to utilize.

13. The method of claim 11 further comprising:

(f) said third network modifying the message received at step (e), by eliminating any media not permitted for said second UE;

(g) said second UE determining the media types said second UE will accommodate;

(h) said second UE transmitting a session progress message having the determined media types to said third network; and

(i) said third network transmitting said session progress message to said first UE through said first and second networks.

14. The method of claim 11 further comprising said first UE being a UE assigned to said second network and transmitting at step (b) while roaming in said first network.

15. The method of claim 11 further comprising said second UE being a UE assigned to said second network and transmitting at step (b) while roaming in said third network.

16. The method of claim 14 wherein said second network, as a home network for said second UE, during step (e) modifies the message by deleting any media types which the second UE is not authorized to use.

17. The method of claim 14 wherein said second network, as a home network for said first UE, during step (e), modifies the message by deleting any media types which the first UE is not authorized to use.

18. A mobile communication system making efficient use of air link resources and network capacity, comprising:

at least one network supporting communications between a first and second user equipments (UEs) in said network;

said first UE generating a session initialization protocol (SIP) message requesting media types which said second UE can accommodate and transmitting the SIP message created by said first means to said network;

said network for modifying said message from said first UE by deleting media types not supported by said network; and

said network for transmitting the modified message to said second UE.

19. A mobile communication system making efficient use of air link resources and network capacity comprising:

a plurality of networks supporting communications between first and second equipment users (UEs) in said networks;

said first UE for generating a session initialization protocol (SIP) message requesting media types which said second UE can accommodate;

said first UE for transmitting the SIP message to one of said networks; and

said one network having means for modifying the SIP message received from said first UE by deleting media types not supported by said one network and for transmitting the modified message to said second UE through a second one of said networks.

20. A mobile communication system making efficient use of air link resources and network capacity, comprising:

a plurality of networks supporting communications between first and second equipment users (UEs) in said network;

said first UE having means for generating a session initialization protocol (SIP) message requesting media types which said second UE can accommodate;

said first UE further including means for transmitting the SIP message, created by said means for generating, to one of said networks; and

said one network having means for modifying the SIP message received from said UE transmitting means by deleting media types which said second UE is not authorized to use and including second means for transmitting the modified SIP message from said modifying means to a second UE through a second one of said networks.

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